
6. EUREKA!

Program Name: Eureka.java Input File: eureka.dat

You are to write a program that will generate the number of capital letters necessary to write a given word.

For each word you are to write, you will need to construct one object of the type `java.util.Random`. This class allows you to specify the seed for the random number generator. For a given seed, the order of the random numbers is always the same.

For example, if you are to write the word EUREKA, you will generate random letters A–Z until you have found the letters, in order, that spell the word EUREKA. Then, you will report the number of letters you had to create to spell the word.

Input

The first line of input will contain a single integer `n` that indicates the number of words to follow. Each of the following `n` lines will contain a `long` to be used as the seed for the random object followed by a space and a single word containing only uppercase letters of the alphabet.

Output

For each word, you will print the number of letters that you had to generate to complete the given word.

Example Input File

```
2
435673456 EUREKA
345664322234 FOOTBALL
```

Example Output to Screen

```
164
445
```

Random letters generated for each seed:

```
435673456
I G F J U Y M L P G X E F Z R J U A M X F H P X M A S A T I S H Y G N O B N F
B P M F E X B B T B V N H H R Q L P U K L P I R I M O I K H P V T C X M G S C
S L C P A M Z S S G Q C N Y O L O B R N Z B L D F G B S S C K Q Y Q I U N U D
D Y P F I T Y O E A D T H C V Q J X C K C P W N S Q C G M E J D P Y V P M K U
X W L C B H N A
345664322234
X O V A P C M Y B E Q O E P D M E V W Z V J I B P D P G C Z B S N O R D M R M
O W L T V C V X P M G H G E P B G E J W A Z O Z G H N L K M L F H R R J B W Z
U U G D A B N T S L F X F U K C Y R K T K A H H A I A H J L C I T R C Z C Z O
J Q I S T N Q Z K V L X Y H Y X D U D X J L G Y N H K R Y C S X V P H M N G L
W D P A S B O F Y Z C Y P B J E P E C M V U U S E X O E R E H Y N Y V D X Q X
E I N F O A M J O Q O B L U H G F S Z Z X N N N F U J W E B E A G Z S A G T E
T T V U E S B N Z U B V H G O P Y W V V J P K N H G D Z B S O H P E C C I W Z
P U O N M B Y L P W Y T J X K S Z V M F H N V J F N I O P T I O G H D I C L R
H K R T R T J F Y G R J V M E R T W V Z O Y Y N I I L L R Z D B Y L X T P M K
S V I J M S T I P C T L Y L P J T Y W D X C I M H F U W Y D V H M X Z C B V R
C X J J L Q T T A B C X B V X M K H Y T Q V V I N B E V B T E Q W A V Y H M O
V O B D Q G Z P C L E V P C K L
```